Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
NOAA TIFF Image - 3m Bathymetry Slope, Florida Deep Coral Areas - Lost Coast Explorer - (2010), UTM 17N NAD83

1.2. Summary description of the data:
This dataset contains a unified GeoTiff with 3x3 meter cell size representing bathymetry of several deep coral priority areas off the Atlantic Coast of Florida, derived from data collected in November 2010. NOAA's NOS/NCCOS/CCMA Biogeography Branch, in collaboration with NOAA vessel Ron Brown, as well as federal, university, and private sector partners, acquired multibeam bathymetry data off the Atlantic Coast of Florida from 10/28/2010 to 10/31/2010. Data was acquired with a hull-mounted Kongsberg EM 710 multibeam echosounder (70 kHz). It was processed by a NOAA contractor using CARIS HIPS software. Attitude and sound velocity correctors applied to the data. Verified tides were not applied to the data, leaving the depth values referenced to the ellipsoid. The imagery is projected in the UTM Zone 17 north, NAD83 datum. The processed CARIS data was used to generate a CARIS BASE surface based on swath angle. The CARIS Export option "BASE Surface to Image" was then used to create a GeoTiff of the priority areas.

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2010-10-28 to 2010-10-31

1.5. Actual or planned geographic coverage of the data:
W: -80.03989, E: -79.495709, N: 31.022815, S: 29.804508

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
raster digital data

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy,

research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NCCOS Scientific Data Coordinator

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
National Centers for Coastal Ocean Science

2.4. E-mail address:
NCCOS.data@noaa.gov

2.5. Phone number:

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:
NCCOS Scientific Data Coordinator

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible
(describe or provide URL of description):

Process Steps:

- 2011-01-01 00:00:00 - For this project, data was collected aboard the Lost Coast Explorer from 10/28/2010 to 10/31/2010. Multibeam data were acquired in .all format with a hull-mounted Kongsberg EM 710 ER multibeam echosounder (70 kHz). Backscatter snippet collection was enabled. Line spacing for acquisition was three times the water depth, and data was retained out to 60 degrees from nadir. Heave, roll, pitch and heading correctors were collected using an Applanix POS/MV Model 320 V4 inertial measurement unit (IMU) and associated Trimble GPS antennas. Sound velocity profiles were acquired with a Seabird Electronics SeaCat SBE19P CTD profiler and processed using NOAA's Velocwin V8.85 software, then applied directly to the raw data. Positioning was obtained using Trimble Zephyr GPS receivers. (Citation: Raw Multibeam Data)

- 2011-01-01 00:00:00 - Raw .all data were converted and processed using CARIS HIPS and Sips 7.0 software, resulting in a CARIS HDCS format dataset with all correctors applied. Attitude and SWMB data was cleaned of fliers, and SWMB data was reviewed in subset mode by a NOAA contractor. (Citation: HDCS Processed Multibeam Data)

- 2011-01-01 00:00:00 - CARIS HIPS v6.0 was used to generate a CARIS BASE surface (similar to a DTM), based on weighted swath angle, from the processed HDCS data. Then CARIS export tool "BASE Surface to Image" was used to export a GeoTiff in NAD83 UTM zone 17N. (Citation: CARIS BASE Surface)

- 2011-01-01 00:00:00 - An ESRI grid of source bathymetry was input into the Rugosity Builder Tool, a component of the ArcGIS Benthic Terrain Modeler (BTM). The BTM tool, a collection of ArcGIS terrain visualization tools developed by the Oregon State University (OSU) Department of Geosciences and the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center, calculated the rugosity of that bathymetric grid based on an algorithm developed by Jeff Jenness. A short summary of the process, quoted directly from the BTM's documentation, is as follows: "...rugosity derivation relies, in part, on a neighborhood analysis using a 3 grid cell by 3 grid cell neighborhood. An algorithm is passed through the Raster Map Algebra Operation object within Spatial Analyst that calculates the planar distance between the center point of the center cell and of each of the eight surrounding cells in the neighborhood. Next, using the Pythagorean Theorem, the surface distance is calculated for each planar distance using the difference in elevation between the cells. The result of this function is sixteen separate grid data sets with each cell value equal to this surface distance. The next step in the process is to calculate the area formed by three adjacent sides. The result is eight triangular surface area grids. These grid datasets are combined to obtain a surface area data set for the input bathymetric data set. The final step in the process is to create a data set that represents the ratio of surface area to planar area. This final data set

represents rugosity for the study area." More information on the specific algorithms used, and contact points for questions, can be found in the BTM's documentation. Rugosity values near 1 represent flat smooth terrain, while higher values reflect increasing rugosity or terrain roughness. For rugosity grid interpretation, is recommended that the grid be reclassified according to standard deviation divisions. (Citation: jax_3mbathy)

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?
No

6.1.1. If metadata are non-existent or non-compliant, please explain:
Missing/invalid information:
- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://inport.nmfs.noaa.gov/inport/item/38759

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NMFS Data Documentation
Procedural Directive: http://www.nmfs.noaa.gov/op/pds/documents/04/111/04-111-01.pdf

7. Data Access
*NAO 212-15 states that access to environmental data may only be restricted when distribution is
explicitly limited by law, regulation, policy (such as those applicable to personally identifiable
information or protected critical infrastructure information or proprietary trade information) or by
security requirements. The EDMC Data Access Procedural Directive contains specific guidance,
recommends the use of open-standard, interoperable, non-proprietary web services, provides
information about resources and tools to enable data access, and includes a Waiver to be submitted
to justify any approach other than full, unrestricted public access.*

7.1. Do these data comply with the Data Access directive?

**7.1.1. If the data are not to be made available to the public at all, or with
limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected
from unauthorized access or disclosure:**

7.2. Name of organization of facility providing data access:
National Centers for Coastal Ocean Science

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
http://coastalscience.noaa.gov/datasets/ccma/biogeo/south_atlantic/bathymetry/lce2010_bathy_3m.zi

7.3. Data access methods or services offered:

7.4. Approximate delay between data collection and dissemination:

**7.4.1. If delay is longer than latency of automated processing, indicate under what
authority data access is delayed:**

8. Data Preservation and Protection
The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to

identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
National Centers for Coastal Ocean Science - Silver Spring, MD

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions
Line and Staff Offices may extend this template by inserting additional questions in this section.